US011738625B2

(12) **United States Patent**
Kellerman et al.

(10) **Patent No.: US 11,738,625 B2**
(45) **Date of Patent: Aug. 29, 2023**

(54) **REMOVABLE PANEL ASSEMBLY FOR A VEHICLE WINDOW AND RELATED METHODS**

(71) Applicant: **K2 Products LLC**, Amelia, OH (US)

(72) Inventors: **Stephen M Kellerman**, Amelia, OH (US); **Charles P Kellerman**, New Richmond, OH (US)

(73) Assignee: **K2 Products LLC**, Amelia, OH (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 219 days.

(21) Appl. No.: **17/224,663**

(22) Filed: **Apr. 7, 2021**

(65) **Prior Publication Data**

US 2021/0316601 A1 Oct. 14, 2021

Related U.S. Application Data

(60) Provisional application No. 63/006,974, filed on Apr. 8, 2020.

(51) **Int. Cl.**

B60J 1/08	(2006.01)
B60J 1/00	(2006.01)
B60J 1/20	(2006.01)

(52) **U.S. Cl.**

CPC ***B60J 1/085*** (2013.01); ***B60J 1/004*** (2013.01); *B60J 1/2094* (2013.01)

(58) **Field of Classification Search**

CPC B60J 1/085; B60J 1/004; B60J 1/2094
USPC 296/146.15
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,549,391	A	4/1951	Second	
2,690,928	A	10/1954	Boynes	
4,025,103	A	5/1977	Eichstaedt	
4,058,221	A	11/1977	Elkins	
4,231,501	A	11/1980	Goode	
4,691,851	A	9/1987	Aaserude	
4,986,209	A *	1/1991	Spica	B60Q 1/268 116/28 R
5,390,837	A	2/1995	Ruffolo, Jr.	
6,298,590	B1 *	10/2001	Levinson	G09F 21/04 40/643
6,446,375	B1	9/2002	Davis	

(Continued)

FOREIGN PATENT DOCUMENTS

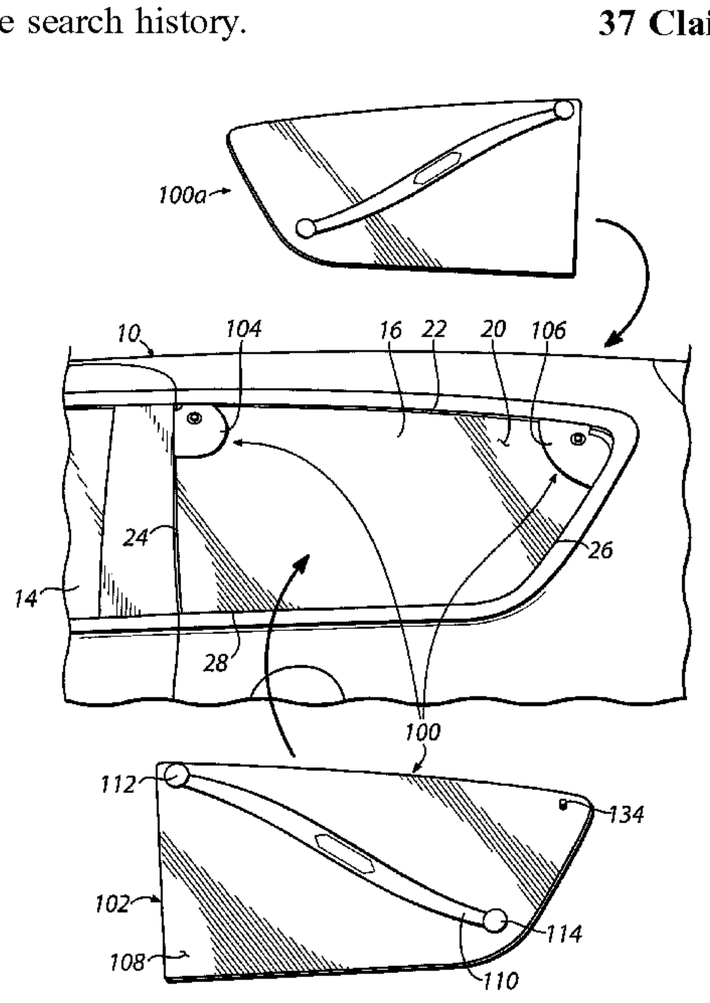
EP	2202108 A	6/2010
EP	2202108 A1	6/2010
JP	2004299674 A	10/2004

Primary Examiner — Joseph D. Pape
Assistant Examiner — Dana D Ivey
(74) *Attorney, Agent, or Firm* — Rooney IP, LLC

(57) **ABSTRACT**

A removable panel assembly for a vehicle window, the panel assembly includes a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window. A first retainer is configured to secure the panel in abutting relation to the window, the first retainer including a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window. A second retainer is configured to secure the panel in abutting relation to the window, the second retainer including a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window.

37 Claims, 11 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

7,007,418	B2	3/2006	Anderson	
2016/0023700	A1 *	1/2016	Dugan	A61G 21/00 296/24.33

* cited by examiner

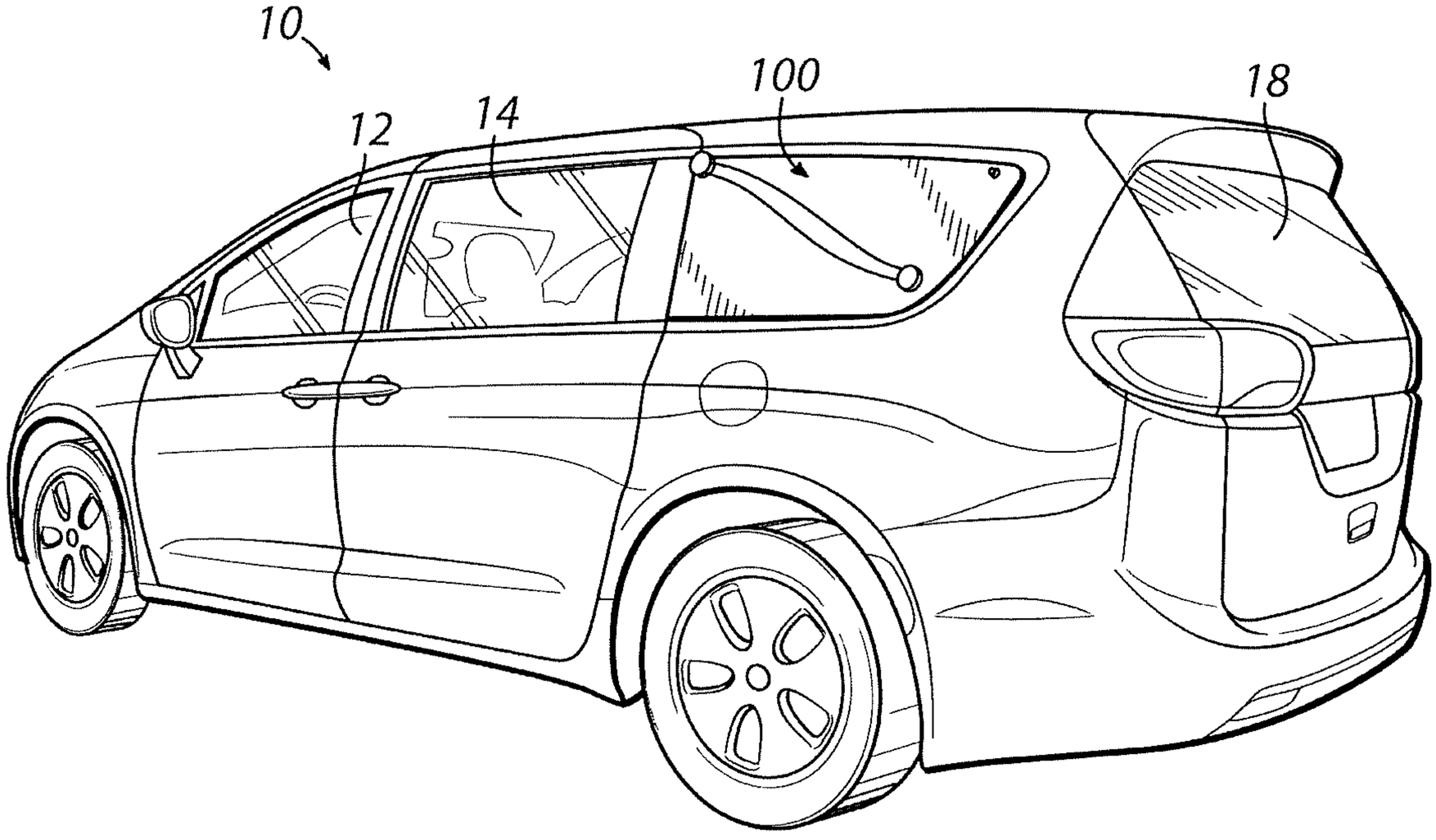


FIG. 1

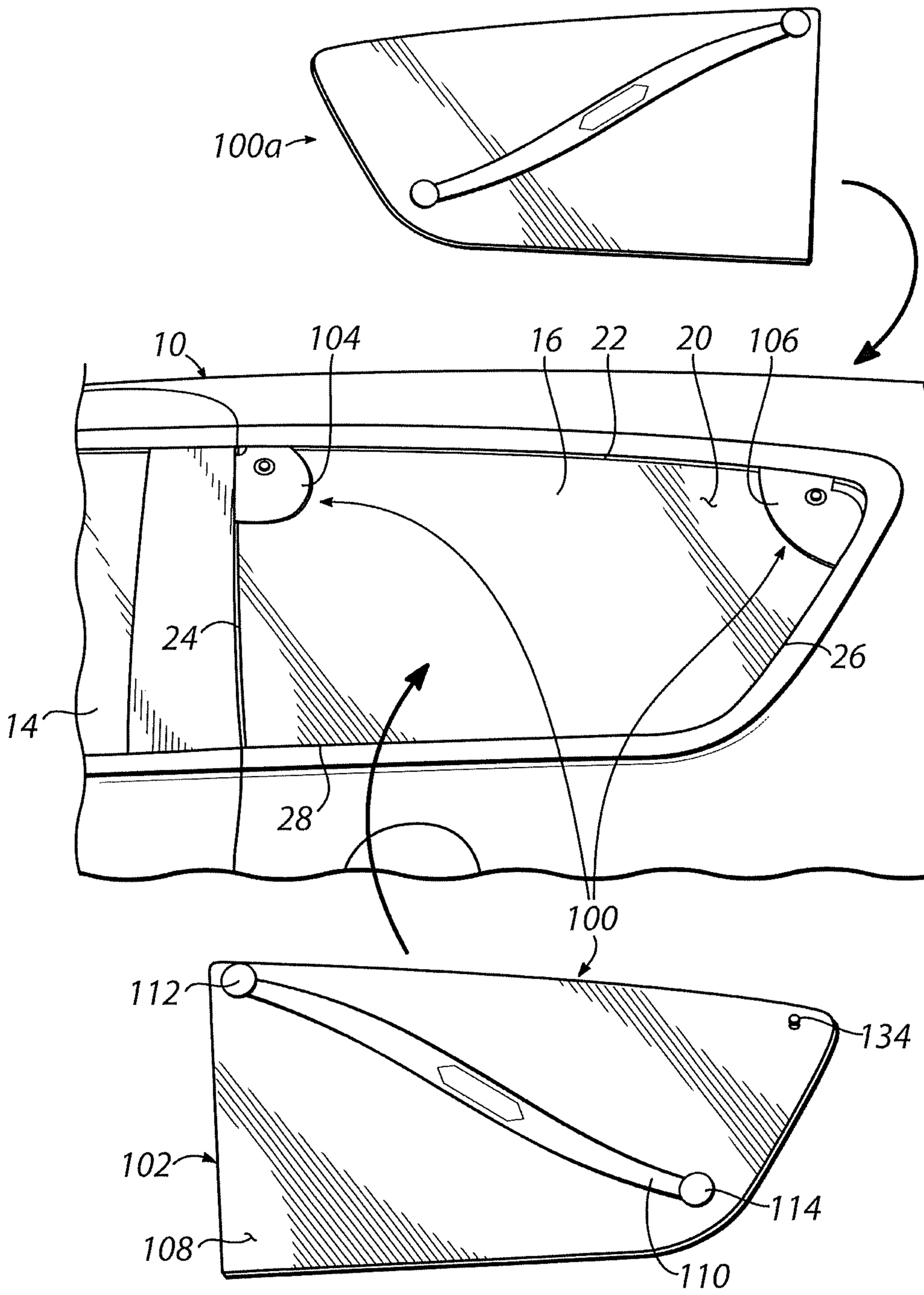


FIG. 2

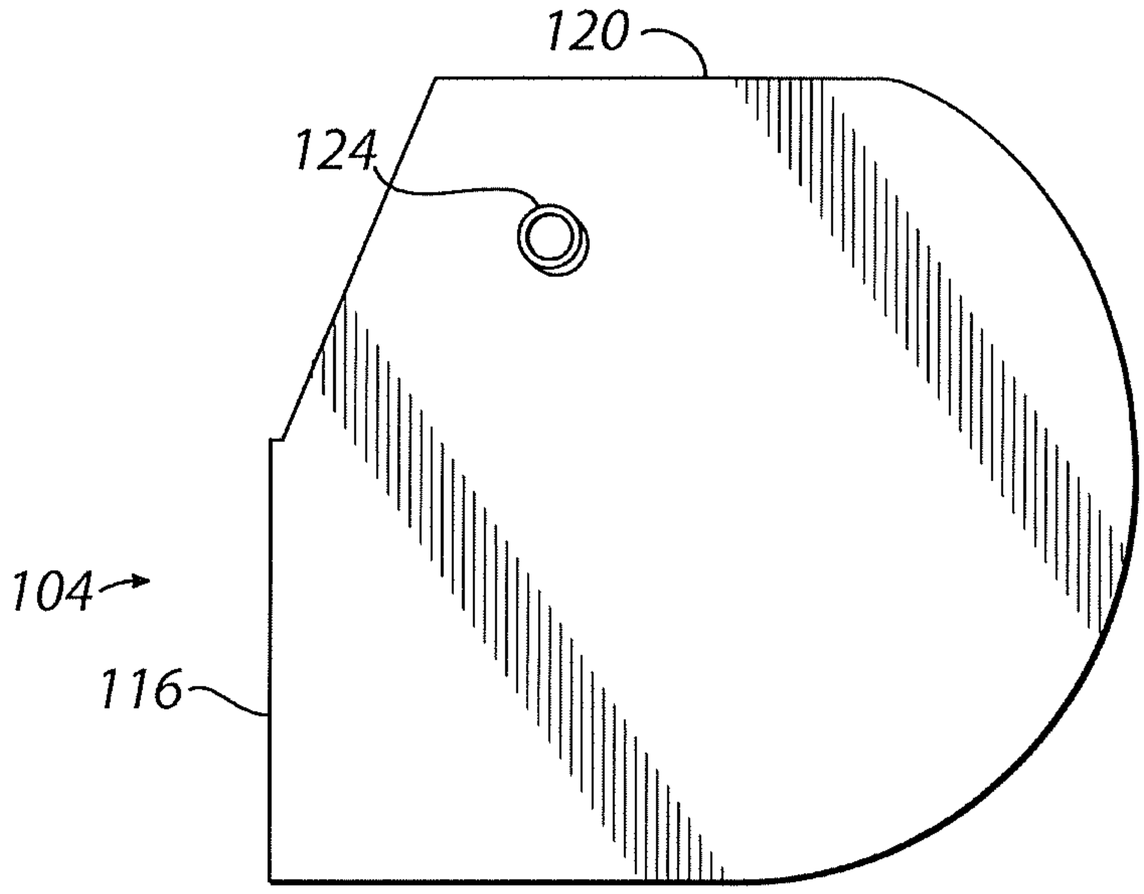


FIG. 3

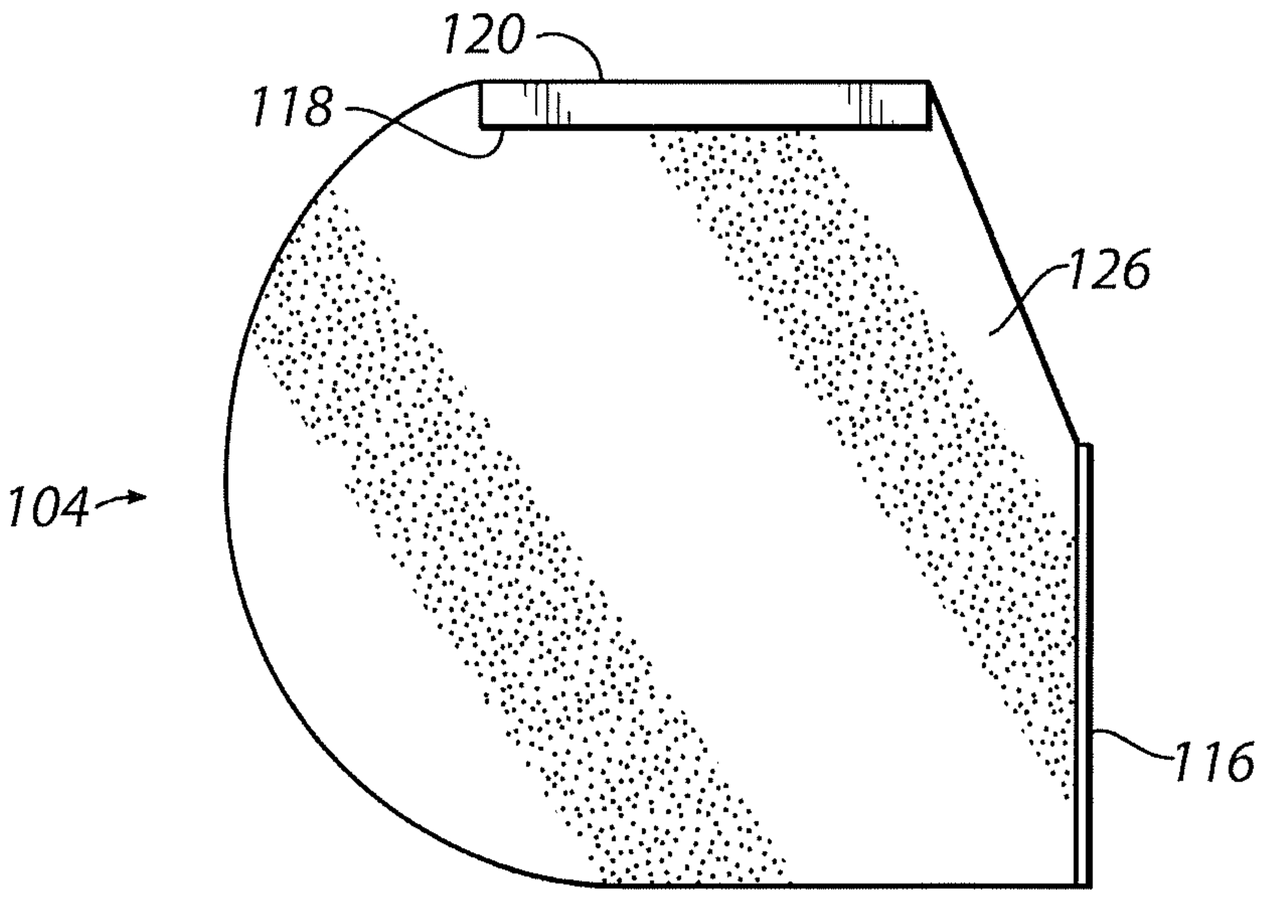


FIG. 4

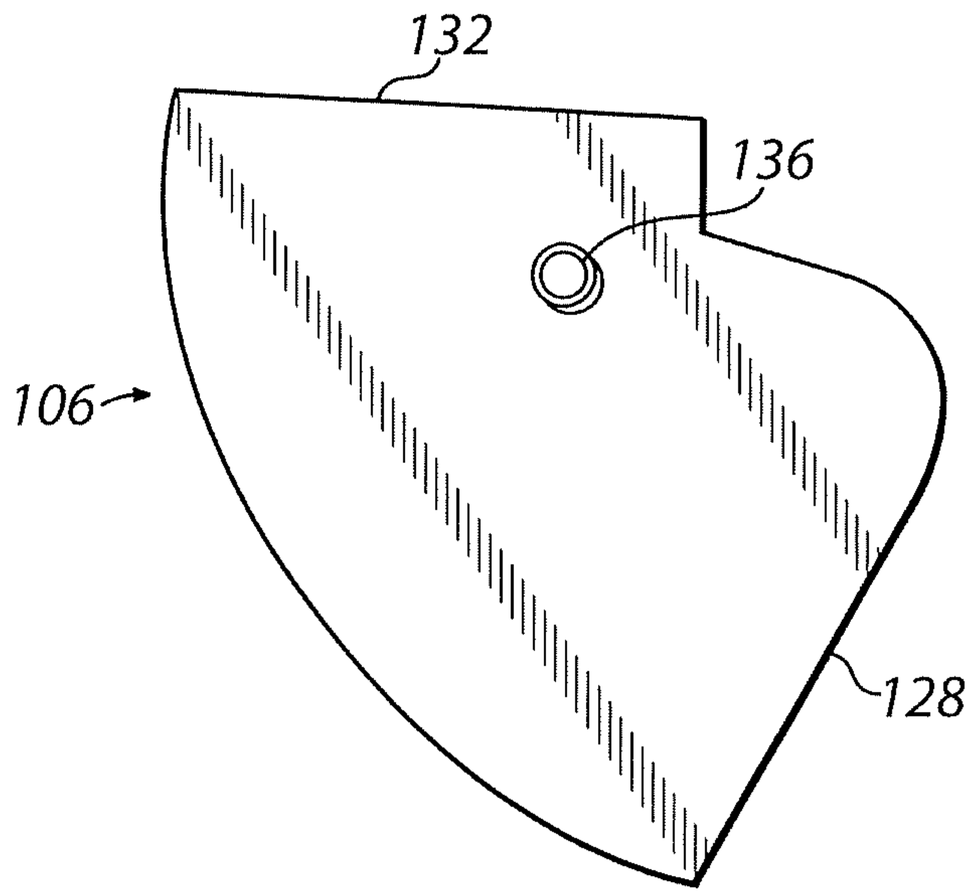


FIG. 5

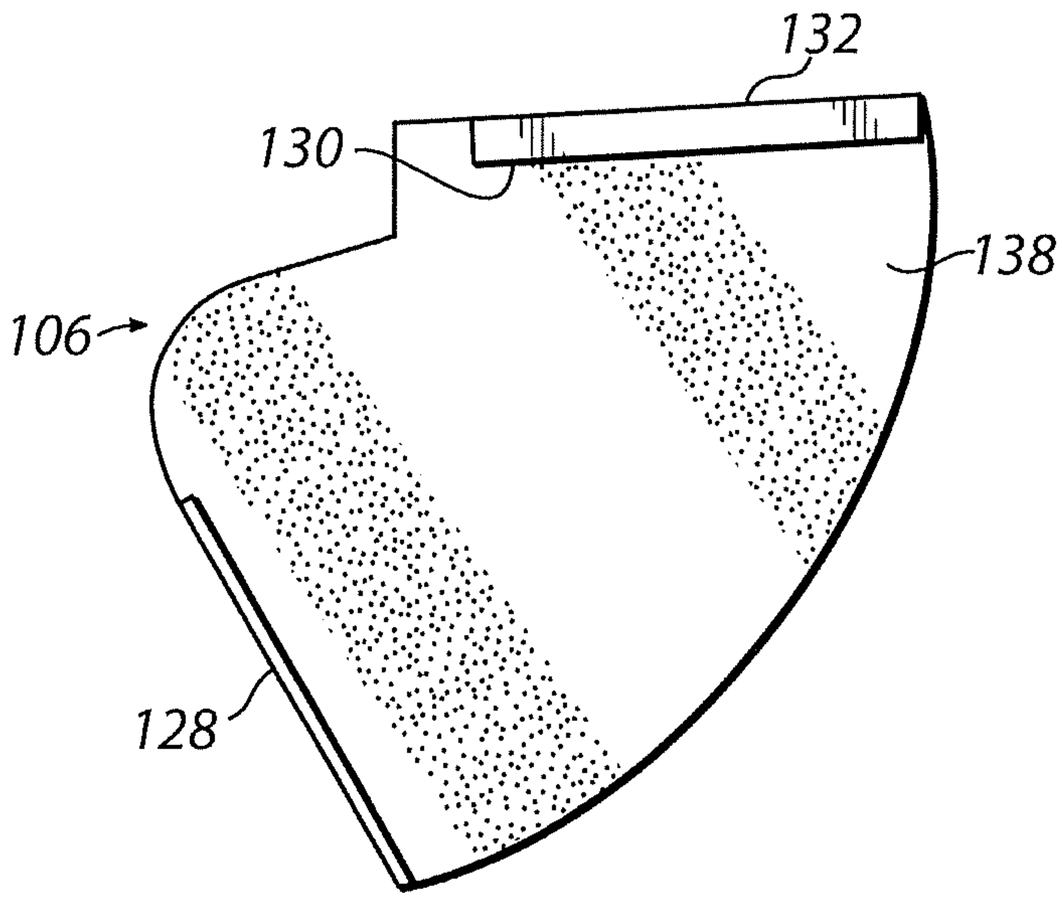


FIG. 6

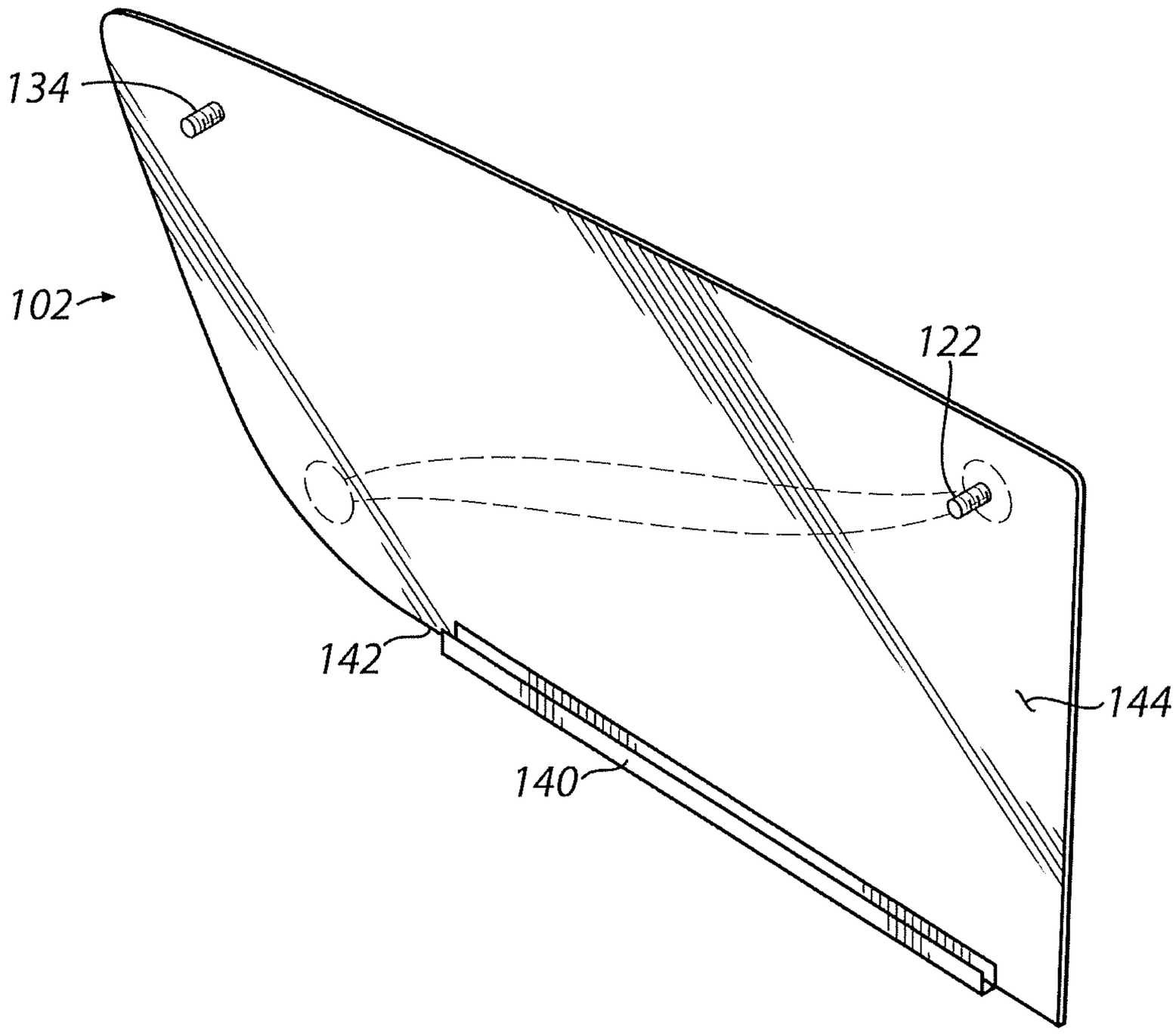


FIG. 7

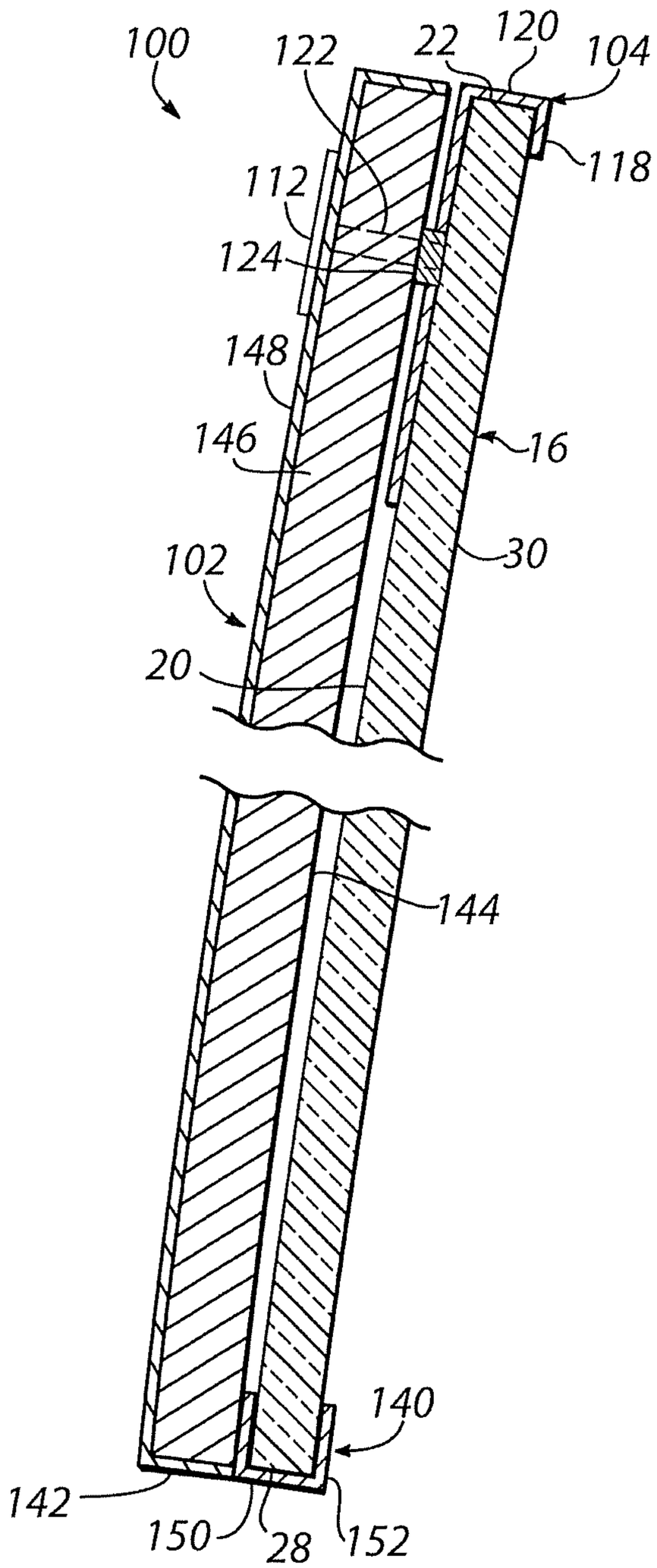

100
122
22
120
104
118
112
124
148
146
16
30
102
20
144
140
142
150
28
152

FIG. 8

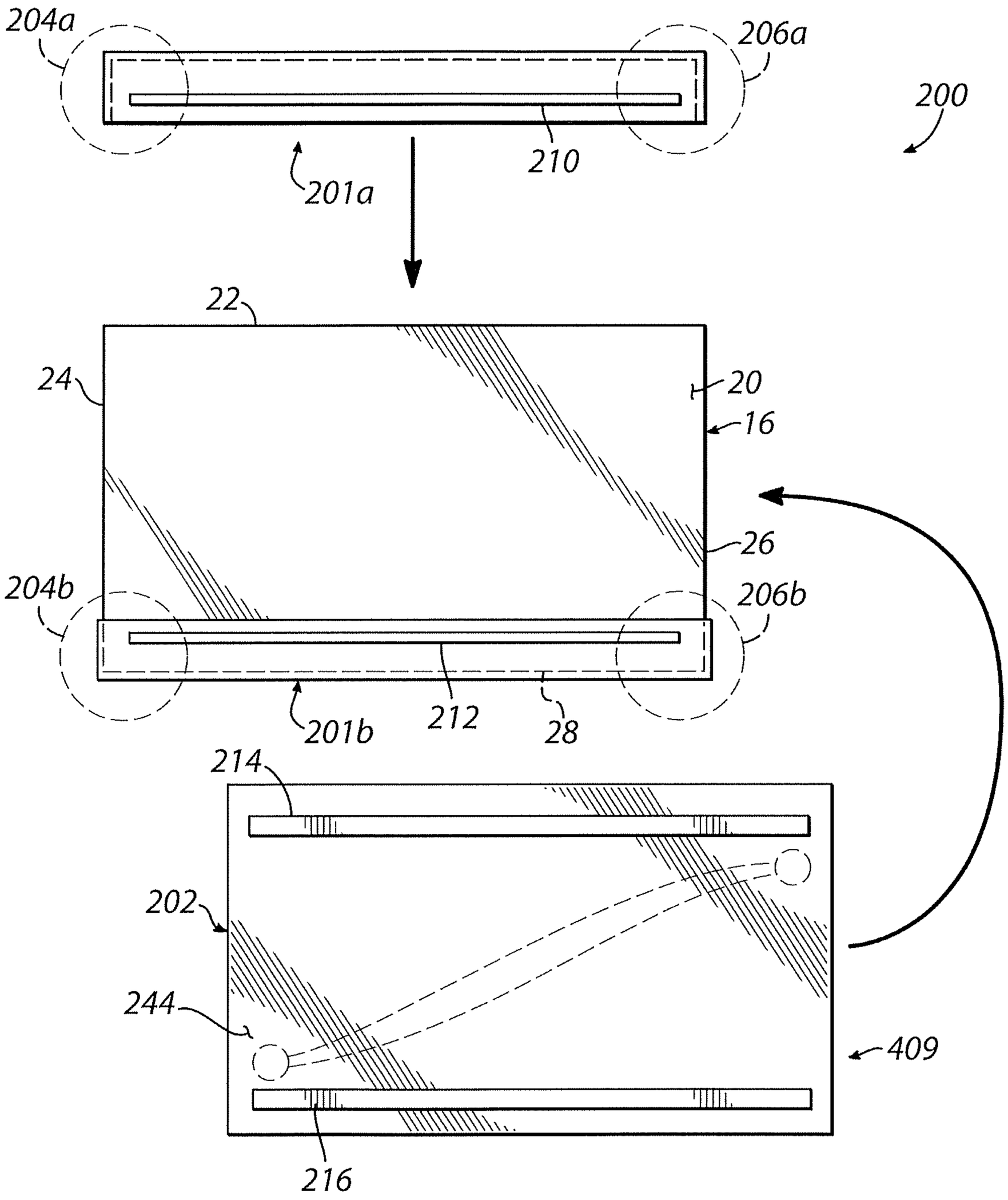

204a
206a
200
210
201a
22
24
20
16
26
204b
206b
201b
212
28
214
202
244
409
216

FIG. 9

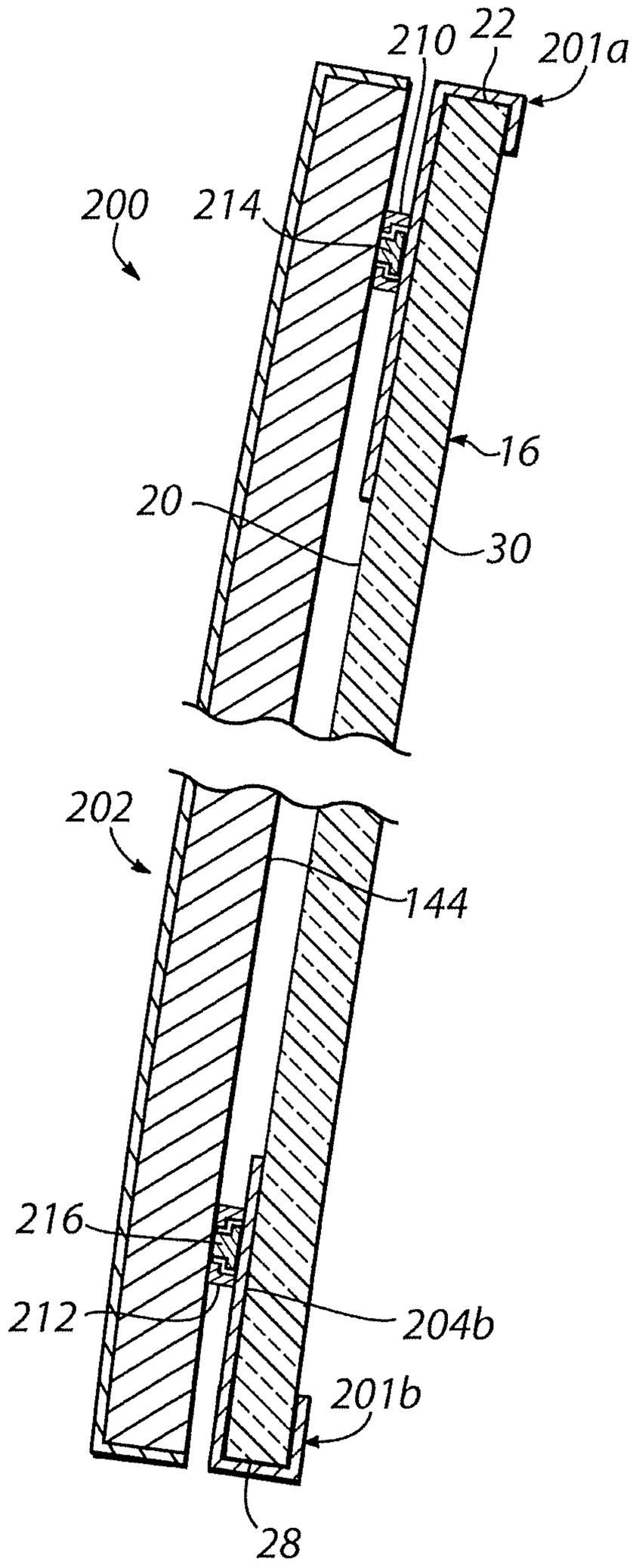


FIG. 10

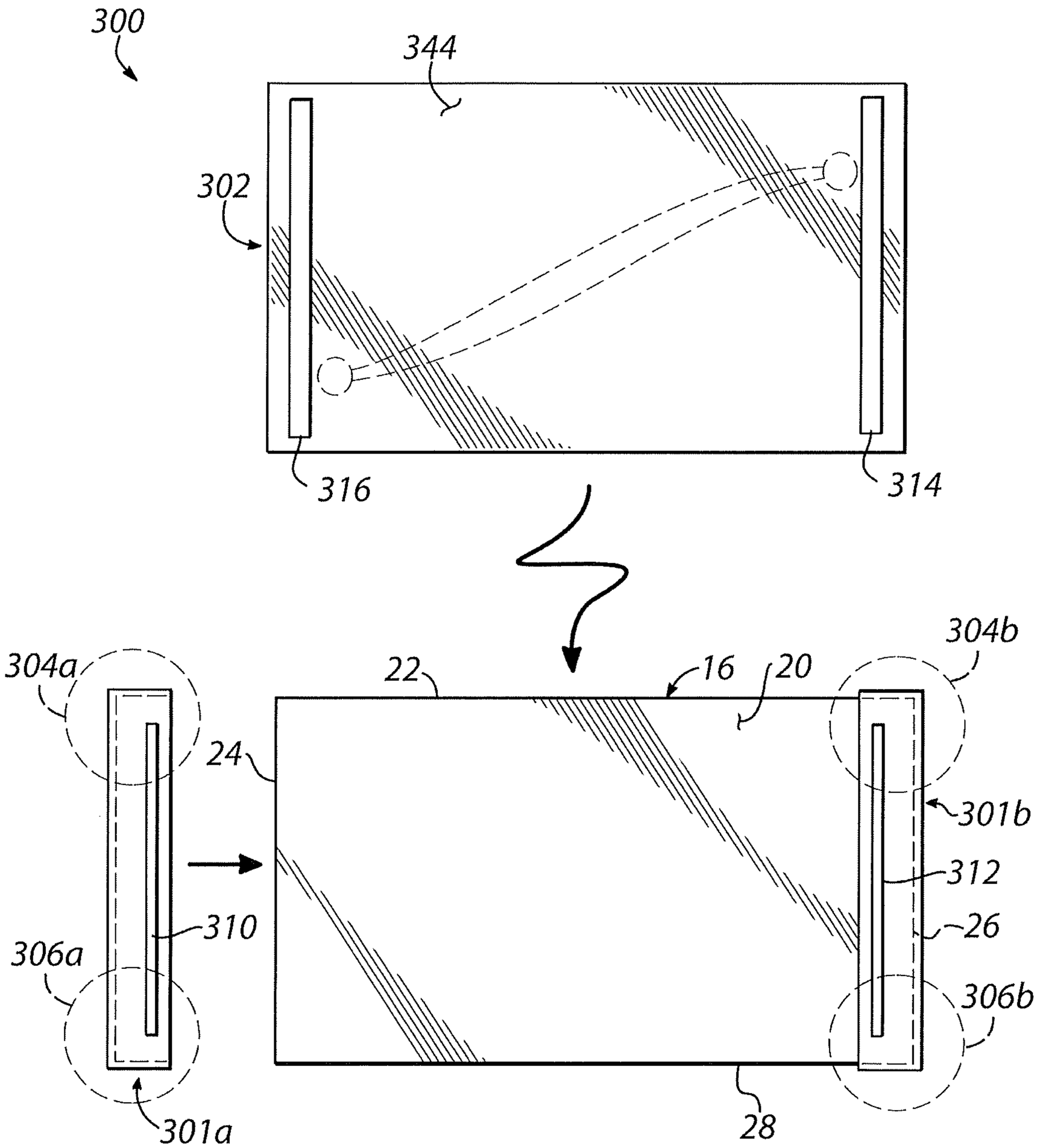

300
344
302
316
314
304a
22
16
20
304b
24
301b
312
310
26
306a
306b
301a
28

FIG. 11

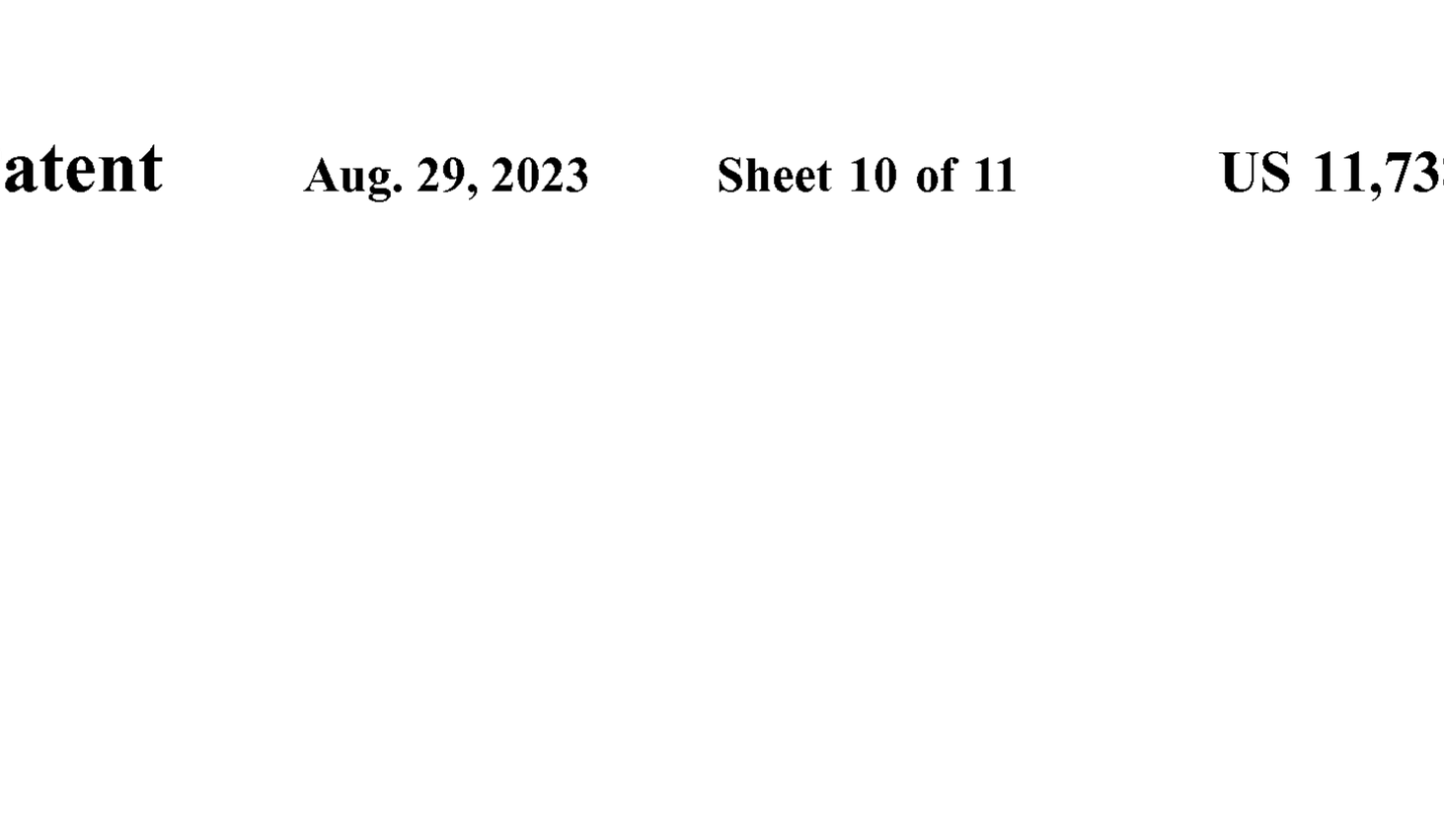

400
402
404b
444
404a
408a
412
410a
414
408b
410b
406b
409
406a

FIG. 12

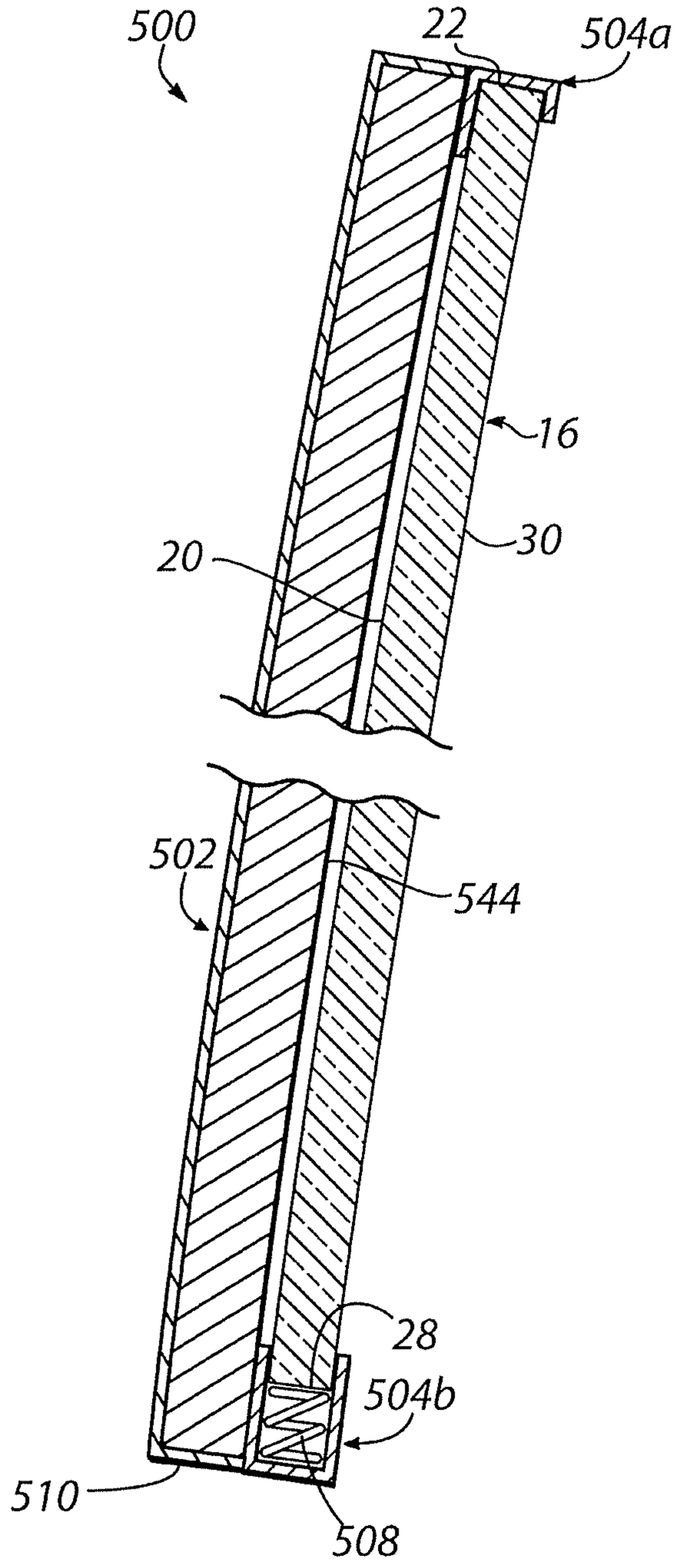


FIG. 13

REMOVABLE PANEL ASSEMBLY FOR A VEHICLE WINDOW AND RELATED METHODS

CROSS REFERENCE TO RELATED APPLICATION

This application claims the priority of U.S. Provisional Patent Application Ser. No. 63/006,974 filed on Apr. 8, 2020, the disclosure of which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

Embodiments relate generally to panels for covering vehicle windows, and, more specifically, to a removable panel assembly configured to overlie at least a portion of a vehicle window, and related methods.

BACKGROUND

Vehicles, such as automobiles and vans, may be modified for specific uses in certain industries. For example, in the funeral industry, automobiles are permanently modified by coachbuilders into specialized hearses or funeral coaches. Among other things, hearses and funeral coaches traditionally have a distinctive shape and include distinctive external decorative elements. These vehicles often include a landau bar (an ornamental S-shaped metallic bar historically associated with the folding roof structure on a landau carriage) on each side of the rear portion of the vehicle. These vehicles typically have a recognizable appearance and are generally used only in connection with the funeral business.

Other vehicles used in the funeral industry include "first call" vehicles, which are used to pick up the remains of a recently deceased person and transport the remains to a funeral home for preparation. Full-size vans, minivans, and sport-utility vehicles are commonly used as first call vehicles. Many first call vehicles include internal modifications to facilitate transportation of deceased persons; however, external modifications, such as funeral-industry-specific ornamentation, may or may not be desirable in particular circumstances. For example, for some uses, it may be desirable for a first call vehicle to be readily recognizable as a funeral vehicle, such as by including landau bars.

The same first call vehicle may also be used in circumstances when it is not desirable for the vehicle to be easily recognizable as a funeral vehicle. For example, it may be desirable for the remains of a recently deceased person to be removed from a particular location discretely and without the presence of a recognizable funeral vehicle. Similarly, some funeral home operators may utilize a particular vehicle, such as a minivan, both in connection with their funeral business and for family transportation. Accordingly, the present disclosure contemplates that the ability to quickly and easily transform the external appearance of a vehicle between that of a standard vehicle and that of a recognizable funeral vehicle may be advantageous.

Some standard vehicles, such as certain minivans, include pivotable rear side windows. Removable landau panels (e.g., panels including landau bars) are available for some of these vehicles. Generally, these panels are installed or removed by sliding along the window while the window is in the open position, and shutting the window secures the panel in place. However, this type of panel is not usable on vehicles that do not include pivotable windows.

Accordingly, the present disclosure contemplates that there is a need for improved removable panels for vehicle windows, such as landau panels.

SUMMARY

Generally, a removable panel assembly for a vehicle window is provided and comprises a removable panel, a first retainer and a second retainer. The removable panel is sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window. The first retainer is configured to secure the panel in abutting relation to the window. The first retainer comprises a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window. The second retainer is configured to secure the panel in abutting relation to the window. The second retainer comprises a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window.

In alternative or additional aspects, the first retainer and the second retainer may be selectively connectable to the panel and selectively detachable from the panel. The first retainer may be selectively connectable to the panel by engagement of a first externally threaded connector with a first internally threaded connector; and the second retainer may be selectively connectable to the panel by engagement of a second externally threaded connector and a second internally threaded connector. When the first retainer is connected to the panel, at least one of the first externally threaded connector and the first internally threaded connector extends through the panel, the first externally threaded connector engages the first internally threaded connector, the first retainer comprising the first internally threaded connector. When the second retainer is connected to the panel, at least one of the second externally threaded connector and the second internally threaded connector extends through the panel, the second externally threaded connector engages the second internally threaded connector, the second retainer comprising the second internally threaded connector.

In some embodiments, the first edge and the second edge of the window are generally opposite edges of the window. The first retainer may further comprise a fifth engagement element configured to engage a third edge of the window and the second retainer may comprise a sixth engagement element configured to engage the third edge of the window. The panel may further comprise a third retainer configured to secure the panel in abutting relation to the window, the third retainer comprising at least one of a fifth engagement element configured to engage a fourth edge of the window and a sixth engagement element configured to engage the inward-facing surface of the window. The third retainer may comprise a generally U-shaped channel disposed proximate an edge of the panel.

On many vehicles, the outward-facing surface of the window is curved. The panel may be pre-curved to substantially conform to at least the portion of the outward-facing surface of the window. The panel may be flexible such that the panel is bendable to substantially conform to at least the portion of the outward-facing surface of the window.

In alternative embodiments, the panel comprises at least one ornamental element disposed on an outward-facing surface of the panel. The ornamental element may comprise a landau bar and at least one landau button. The at least one landau button may be coupled to at least one of the first externally threaded connector and the first internally

threaded connector. Alternatively, the ornamental element may comprise an indicium associated with at least one of a sports team, a trade, and a business.

In alternative or additional aspects, the panel comprises a substrate and at least one of a covering and a coating. The substrate may comprise at least one of plastic, molded resin, fiberglass, sheet metal, and aluminum. The substrate may be generally rigid and the covering may be substantially flexible. The covering may comprise vinyl fabric.

In another embodiment, generally, a removable panel assembly for a vehicle window is provided and comprises a removable panel, a first retainer and a second retainer coupled together as part of a first retainer assembly. The removable panel is sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window. The first retainer comprises a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window. The second retainer is configured to secure the panel in abutting relation to the window. The second retainer comprises a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window.

The first retainer assembly may further comprise a first retainer assembly track. The panel may further comprise a first panel track disposed on an inward-facing surface of the panel. The panel may be selectively connectable to the first retainer assembly by sliding the panel with respect to the window to engage the first panel track with the first retainer assembly track.

The removable panel assembly may further comprise a third retainer and a fourth retainer coupled together as part of a second retainer assembly. The third retainer is configured to secure the panel in abutting relation to the window. The third retainer comprises a fifth engagement element configured to engage a first edge of the window and a sixth engagement element configured to engage the inward-facing surface of the window. The fourth retainer is configured to secure the panel in abutting relation to the window. The fourth retainer comprises a seventh engagement element configured to engage the second edge of the window and an eighth engagement element configured to engage the inward-facing surface of the window.

The second retainer assembly may further comprise a second retainer assembly track. The panel may further comprise a second panel track disposed on an inward-facing surface of the panel. The panel may be selectively connectable to the second retainer assembly by sliding the panel with respect to the window to engage the second panel track with the second retainer assembly track.

In some embodiments, the first panel track and the first retainer assembly track may be oriented generally horizontally wherein the panel is selectively connectable to the first retainer assembly by sliding the panel generally horizontally with respect to the window to engage first panel track with the first retainer assembly track. The second panel track and the second retainer assembly track may be oriented generally horizontally wherein the panel is selectively connectable to the second retainer assembly by sliding the panel generally horizontally with respect to the window to engage the second panel track with the second retainer assembly track.

In alternative embodiments, the first panel track and the first retainer assembly track may be oriented generally vertically wherein the panel is selectively connectable to the first retainer assembly by sliding the panel generally vertically with respect to the window to engage the first panel track with the first retainer assembly track. The second panel track and the second retainer assembly track may be oriented generally vertically wherein the panel is selectively connectable to the second retainer assembly by sliding the panel generally vertically with respect to the window to engage the second panel track with the second retainer assembly track.

In alternative embodiment, generally, a removable panel assembly for a vehicle window is provided and comprises a removable panel, a first retainer, and a second retainer. The removable panel is sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window. The first retainer is configured to secure the panel in abutting relation to the window. The first retainer comprises a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window. The second retainer is configured to secure the panel in abutting relation to the window. The second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window. At least one of the first retainer and the second retainer is movably disposed on the inward-facing surface of the panel to selectively engage with the window.

The panel assembly may further comprise a first tightening mechanism. The first tightening mechanism is operatively coupled to at least one of the first retainer and the second retainer. The first tightening mechanism is configured to move at least one of the first retainer and the second retainer to engage the window.

The removable panel assembly may further comprise a third retainer, and a fourth retainer. The third retainer is configured to secure the panel in abutting relation to the window. The third retainer comprises a fifth engagement element configured to engage a first edge of the window and a sixth engagement element configured to engage an inward-facing surface of the window. The fourth retainer is configured to secure the panel in abutting relation to the window. The fourth retainer comprises a seventh engagement element configured to engage a second edge of the window and an eighth engagement element configured to engage the inward-facing surface of the window. At least one of the third retainer and the fourth retainer is movably disposed on the inward-facing surface of the panel to selectively engage with the window.

The panel assembly may further comprise a second tightening mechanism. The second tightening mechanism is operatively coupled to at least one of the third retainer and the fourth retainer to move at least one of the third retainer and the fourth retainer to engage the window.

In another embodiment, generally, a removable panel assembly for a vehicle window is provided and comprises a removable panel, a first retainer and a second retainer. The removable panel is sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window. The first retainer is configured to secure the panel in abutting relation to the window. The first retainer comprises a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window. The second retainer is configured to secure the panel in abutting relation to the window. The second retainer comprises a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window. The second

retainer comprises a biasing element configured to bias the panel to hold the first retainer in engagement with the window.

In alternative or additional aspects, the first retainer may be configured to engage the top edge of the window and the biasing element may be configured to bias the panel generally downward. The biasing element may comprise a compression spring. The second retainer may comprise an elongated channel disposed generally along a bottom edge of the panel and the compression spring may be disposed in the channel.

Generally, a method of manufacturing a removable panel assembly for a vehicle window is provided and includes providing a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window, providing a first retainer configured to secure the panel in abutting relation to the window, the first retainer comprising a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window, and providing a second retainer configured to secure the panel in abutting relation to the window, the second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window.

In alternative or additional aspects, a method of manufacturing a removable panel assembly includes providing a first externally threaded connector and a first internally threaded connector configured to selectively connect the panel to the first retainer, and providing a second externally threaded connector and a second internally threaded connector configured to selectively connect the panel to the second retainer. The method may include providing a third retainer wherein the third retainer is configured to engage at least one of a fourth edge of the window and the inward-facing surface of the window, and the third retainer comprises a generally U-shaped channel disposed proximate an edge of the panel.

In some embodiments, the outward-facing surface of the window is curved. Providing the removable panel may include pre-curving the panel to substantially conform to at least the portion of the outward-facing surface.

In alternative or additional aspects, the panel may comprise a substrate and at least one of a covering and a coating and manufacturing the removable panel includes providing the substrate, and applying at least one of the covering and the coating to the substrate. The substrate may comprise at least one of molded plastic and fiberglass and manufacturing the substrate includes molding the substrate. The covering may comprise a vinyl fabric and manufacturing the substrate and the covering includes applying the vinyl fabric to the substrate. The removable panel may include disposing at least one ornamental element on an outward-facing surface of the panel.

Generally, a method of using a removable panel assembly is provided and includes disposing a first retainer on a vehicle window by engaging a first engagement element of the first retainer with a first edge of the window, engaging a second engagement element of the first retainer with an inward-facing surface of the window, disposing a second retainer on the vehicle window by engaging a third engagement element of the second retainer with a second edge of the window, engaging a fourth engagement element of the second retainer with the inward-facing surface of the window, and connecting a removable panel to the first retainer and the second retainer, the removable panel being in an abutting relation with at least a portion of an outward-facing surface of the vehicle window.

In alternative or additional aspects, a method of using a removable panel assembly may include connecting the removable panel to the first retainer and the second retainer by engaging a first externally threaded connector with a first internally threaded connector, and engaging a second externally threaded connector and a second internally threaded connector.

Additional aspects and advantages of the invention will become more apparent upon further review of the detailed description of the illustrative embodiments taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of an illustrative vehicle comprising a removable panel assembly.

FIG. **2** is a detailed, exploded, side elevation view of the vehicle and the panel assembly.

FIG. **3** is a front elevation view of an illustrative first retainer.

FIG. **4** is a rear elevation view of the first retainer.

FIG. **5** is front elevation view of an illustrative second retainer.

FIG. **6** is a rear elevation view of the second retainer.

FIG. **7** is a rear perspective view of an illustrative panel.

FIG. **8** is a cross-section view of an illustrative panel assembly installed on a vehicle window.

FIG. **9** is an exploded elevation view of an alternative illustrative panel assembly and a vehicle window.

FIG. **10** is a cross-section view of the illustrative panel assembly installed on the vehicle window.

FIG. **11** is an exploded elevation view of an alternative illustrative embodiment panel assembly.

FIG. **12** is an elevation view of an inward-facing surface of an alternative illustrative embodiment panel assembly.

FIG. **13** is a cross-section view of an alternative illustrative panel assembly **500** installed on a vehicle window.

DETAILED DESCRIPTION

Referring to FIGS. **1** and **2**, the illustrative vehicle **10** includes various windows, such as side windows **12**, **14**, **16** and a rear window **18**. The illustrative panel assembly **100** is configured to be removably attached to the rear-most side window **16**. A second panel assembly **100***a*, which is similar to the panel assembly **100** except that it is substantially a mirror image of the panel assembly **100**, may be removably attached to the corresponding window on the opposite side of the vehicle **10**.

An illustrative vehicle ornamentation kit may comprise one or more removable panel assemblies. For example, a vehicle ornamentation kit may include a panel assembly **100** for a window on the left side of a vehicle **10** and a panel assembly **100***a* for a window on the right side of the vehicle. The panel assemblies **100**, **100***a* may be purchased and installed by an end user of the vehicle, or the panel assemblies **100**, **100***a* may be installed by a dealer or distributor prior to sale of the vehicle **10** to the end user. Accordingly, a vehicle **10** may comprise one or more vehicle windows **12**, **14**, **16**, **18** and one or more illustrative panel assemblies **100**, **100***a*.

Generally, the window **16** comprises a pane of automotive glass having an outward-facing surface **20**, various edges (e.g., a top edge **22**, a forward edge **24**, a rear edge **26**, and a bottom edge **28**), and an inward-facing surface **30** (FIG. **8**).

The top edge **22** and the bottom edge **28** may be generally opposite each other and/or the forward edge **24** and the rear edge **26** may be generally opposite each other. Other illustrative embodiments may be configured for use on other windows **12**, **14**, **18**.

The panel assembly **100** comprises a panel **102** that is sized and shaped to overlie at least a portion of the outward-facing surface **20** of the window **16**. In some illustrative embodiments, the panel **102** may be generally the same size and shape as the window **16** so that the panel **102** substantially covers the entire outward-facing surface **20** of the window **16**. In other illustrative embodiments, the panel **102** may overlie less than the entire window **16**. For example, an alternative embodiment panel **102** may cover at least about 90% of the entire window **16**.

The illustrative panel assembly **100** comprises a first retainer **104** and a second retainer **106** that are configured to secure the panel **102** in abutting relation to the window **16**. As used herein, "in abutting relation" may describe a panel **102** that is partially or entirely in direct contact with all or a portion of the outward-facing surface **20** the window **16**. As used herein, "in abutting relation" may also describe a panel **102** that is positioned substantially adjacent or alongside the outward-facing surface **20** of the window **16**, with or without direct contact between the panel **102** and the window **16** and/or with or without a relatively small gap between some or all of the panel **102** and the window **16**. In this illustrative embodiment, the first retainer **104** and the second retainer **106** are selectively connectable to the panel **102** and selectively detachable from the panel **102** as described in more detail below. The first retainer **104** and the second retainer **106** are readily engageable with and removable from the window **16**.

The panel assembly **100** may include one or more ornamental elements disposed on an outward-facing surface **108** of the panel **102**. For example, the illustrative panel assembly **100** comprises ornamental elements including a landau bar **110** and two landau buttons **112**, **114** disposed on the outward-facing surface **108** of the panel **102**. The landau bar **110** and/or the landau buttons **112**, **114**, may comprise a chrome surface. Alternatively, some assemblies **100** for funeral vehicles may include ornamental elements comprising wreaths, such as chrome wreaths. Other embodiments may include alternative ornamental elements, such as one or more indicia associated with a sports team, a trade, or a business, such as a nameplate, which may have a chrome surface.

Referring to FIGS. **2-4**, the first retainer **104** comprises an engagement element **116**, which is in the form of a flange configured to extend generally perpendicular to the outward-facing surface **20** and generally along the front edge **24** of the window **16**. The engagement element **116** is configured to engage an edge, such as the front edge **24**, of the window **16**. Generally, by engaging the front edge **24** of the window **16**, the engagement element **116** is configured to oppose rearward movement of the first retainer **104** with respect to the vehicle **10**.

The first retainer **104** comprises an engagement element **118**, which is in the form of the flange of a U-shaped channel extending along the inward-facing surface **30** of the window **16** proximate the top edge **22**. The engagement element **118** is configured to engage the inward-facing surface **30** of the window **16**. Generally, by engaging the inward-facing surface **30** of the window **16**, the engagement element **118** is configured to oppose movement of the first retainer **104** laterally outwardly away from the window **16** with respect to the vehicle **10**. The web of the U-shaped channel (e.g., the bottom of the "U") comprises an engagement element **120** configured to engage the top edge **22** of the window **16**. Generally, by engaging the top edge **22** of the window **16**, the engagement element **120** is configured to oppose downward movement of the first retainer **104** with respect to the vehicle **10**.

In the illustrative embodiment, the first retainer **104** is selectively connectable to the panel **102** by engagement of a first externally threaded connector **122** (FIG. **7**) with a first internally threaded connector **124**. The first internally threaded connector **124** is in the form of a weld nut arranged to engage the first externally threaded connector **122** extending inwardly from the panel **102**. The first retainer **104** is selectively detachable from the panel **102** by disengaging the first externally threaded connector **122** from the first internally threaded connector **124**. Other embodiments may include alternative connectors, such as bolts, screws, clips, brackets, elastics cords, springs, clamps, etc.

In the illustrative embodiment, the first retainer **104** is constructed of generally planar metal which is bent to form the engagement element **116**, the engagement element **118**, and the engagement element **120**. In some alternative embodiments, the first retainer **104** may be constructed of plastic, for example. Portions of the first retainer **104** are covered by padding **126**, such as felt, which may protect the window **16** from scratches and other potential damage from the first retainer **104**.

Referring to FIGS. **2**, **5**, and **6**, the second retainer **106** comprises an engagement element **128**, which is in the form of a flange extending generally perpendicular to the outward-facing surface **20** and generally along the rear edge **26** of the window **16**. The engagement element **128** is configured to engage an edge, such as the rear edge **26**, of the window **16**. Generally, by engaging the rear edge **26** of the window **16**, the engagement element **128** is configured to oppose forward movement of the second retainer **106** with respect to the vehicle **10**.

The second retainer **106** comprises an engagement element **130**, which is in the form of the flange of a U-shaped channel extending along the inward-facing surface **30** of the window **16** proximate the top edge **22**. The engagement element **130** is configured to engage the inward-facing surface **30** of the window **16**. Generally, by engaging the inward-facing surface **30** of the window **16**, the engagement element **130** is configured to oppose movement of the second retainer **106** laterally outwardly away from the window **16** with respect to the vehicle **10**. The web of the U-shaped channel (e.g., the bottom of the "U") comprises an engagement element **132** configured to engage the top edge **22** of the window **16**. Generally, by engaging the top edge **22** of the window **16**, the engagement element **132** is configured to oppose downward movement of the second retainer **106** with respect to the vehicle **10**.

In the illustrative embodiment, the second retainer **106** is selectively connectable to the panel **102** by engagement of a second externally threaded connector **134** (FIG. **7**) with a second internally threaded connector **136**. The second internally threaded connector **136** is in the form of a weld nut arranged to engage the second externally threaded connector **134** extending inwardly from the panel **134**. The second retainer **106** is selectively detachable from the panel **102** by disengaging the second externally threaded connector **134** from the second internally threaded connector **136**.

In the illustrative embodiment, the second retainer **106** is constructed of generally planar metal which has been bent to form the engagement element **128**, the engagement element **130**, and the engagement element **132**. In some alternative

example embodiments, the second retainer **106** may be constructed of plastic, for example. Portions of the first retainer **106** are covered by padding **138**, such as felt, which may protect the window **16** from scratches and other potential damage from the second retainer **106**.

Referring to FIGS. **2**, **7**, and **8**, the panel **102** comprises a third retainer **140** configured to secure the panel in abutting relation to the window **16**. The third retainer comprises an engagement element **150** configured to engage the bottom edge **28** of the window **16** and/or an engagement element **152** configured to engage the inward-facing surface **30** of the window **16**. In this illustrative embodiment, the third retainer **140** comprises a generally U-shaped channel disposed proximate the bottom edge **142** of the panel **102**. In this illustrative embodiment, the channel comprising the third retainer **140** is affixed to the inward-facing surface **144** of the panel. In other illustrative embodiments the third retainer **140** may be generally similar to the first and second retainers **104**, **106** and/or may be selectively connectable to the panel **102**, such as in a manner similar to the first and second retainers **104**, **106**.

Referring to FIG. **8**, in this illustrative embodiment, when the first retainer **104** is connected to the panel **102**, the first externally threaded connector **122** extends through the panel **102** to engage the first internally threaded connector **124** of the first retainer **104**. In this illustrative embodiment, the landau button **112** is coupled to the first externally threaded connector **122**. Similarly, referring to FIGS. **5**, **7**, and **8**, when the second retainer **106** is connected to the panel **102**, the second externally threaded connector **134** extends through the panel **102** to engage the second internally threaded connector **136** of the second retainer **106**.

In the illustrative embodiment, the outward-facing surface **20** of the window **16** is generally curved, such as in a convex manner. When installed, the panel **102** substantially conforms to the curvature of the window **16**. As used herein, "conform" may be used to describe a panel **102** having a shape that substantially corresponds to the curvature (if any) of the window **16**. In some embodiments, the panel **102** may be pre-curved to substantially conform to the curvature of at least a portion of the outward-facing surface **20** of the window **16**. As used herein, "pre-curved" may describe a panel **102** that, when removed from the window **16**, generally remains in a shape corresponding to the curvature (if any) of the window **16**. In some embodiments, the panel **102** may be flexible such that the panel **102** is bendable to substantially conform to the curvature of at least a portion of the outward-facing surface **20** of the window **16**. In such embodiments, the panel **102** may be elastically deformable such that it may conform to the shape of the window **16** when installed while returning to another shape when removed.

In the illustrative embodiment, the panel **102** comprises a substrate **146** and a covering **148**. The substrate **146** may comprise, for example, plastic, molded resin, fiberglass, sheet metal, and/or aluminum. The covering **148** may comprise, for example, paint and/or vinyl fabric. In some embodiments, the substrate **146** may be generally rigid (e.g., rigid fiberglass) and the covering **148** may be substantially flexible (e.g., vinyl fabric).

Referring to FIGS. **9** and **10**, this alternative illustrative panel assembly **200** is generally similar to the panel assemblies described elsewhere herein, except for the features described below. Unless specifically indicated, the description of the structure and function or methodology of corresponding components with respect to the other panel assemblies described herein generally applies to the panel assembly **200**.

The illustrative panel assembly **200** comprises a panel **202**, a first retainer assembly **201***a*, and a second retainer assembly **201***b*. The first retainer assembly **201***a* and the second retainer assembly **201***b* are configured to secure the panel **202** in abutting relation to the window **16** and are selectively connectable to the panel **202** and are selectively detachable from the panel **202**.

The first retainer assembly **201***a* comprises a first retainer **204***a* and a second retainer **206***a*, and the second retainer assembly **201***b* comprises a third retainer **204***b* and a fourth retainer **206***b*. Generally, each retainer **204***a*, **206***a*, **204***b*, **206***b* may be generally similar to the retainers **104**, **106** described above with reference to the panel assembly **100**, such as including engagement elements similar to engagement elements **116**, **118**, **128**, **130**. In this panel assembly **200**, however, the first retainer **204***a* and the second retainer **206***a* are provided coupled together as part of the first retainer assembly **201***a*. Similarly, the third retainer **204***b* and the fourth retainer **206***b*, which may be generally similar to the retainers **104**, **106** described above, are provided coupled together as part of the second retainer assembly **201***b*.

In this illustrative embodiment, the first retainer assembly **201***a* is oriented generally horizontally, such as along the top edge **22** of the window **16** with the first retainer **204***a* engaging the forward edge **24**, the top edge **22**, and/or the inward-facing surface **30** and the second retainer **206***a* engaging the rear edge **26**, the top edge **22**, and/or the inward-facing surface **30**. Similarly, the second retainer assembly **201***b* is oriented generally horizontally, such as along the bottom edge **28** of the window **16** with the third retainer **204***b* engaging the forward edge **24**, the bottom edge **28**, and/or the inward-facing surface **30** and the fourth retainer **206***b* engaging the rear edge **26**, the bottom edge **28**, and/or the inward-facing surface **30**.

In this illustrative embodiment, each of the first retainer assembly **201***a* and the second retainer assembly **201***b* includes a respective retainer assembly track **210**, **212**, which is configured to slidably engage a corresponding panel track **214**, **216**, disposed on the inward-facing surface **244** of the panel. The tracks **210**, **212**, **214**, **216** of the first retainer assembly **201***a*, the second retainer assembly **201***b*, and the panel **202** are oriented generally horizontally. Accordingly, the panel **202** is selectively connectable to and selectively detachable from the retainer assemblies **201***a*, **201***b* by sliding the panel **202** generally horizontally with respect to the window **16** (e.g., generally forward or rearward with respect to the vehicle **10**). Specifically, the corresponding tracks **210**, **212**, **214**, **216** are aligned and the panel **202** is slid relative to the retainer assemblies **201***a*, **201***b* to engage (or disengage) the tracks **210**, **212**, **214**, **216**.

Referring to FIG. **11**, this alternative illustrative panel assembly **300** is generally similar to the panel assemblies described elsewhere herein, except for the features described below. Unless specifically indicated, the description of the structure and function or methodology of corresponding components with respect to the other panel assemblies described herein generally applies to the panel assembly **300**. More specifically, this alternative illustrative panel assembly **300** is similar to the panel assembly **200** of FIGS. **9** and **10**, except that the first retainer assembly **301***a* and the second retainer assembly **301***b* of the panel assembly **300** are positioned generally vertically, such as along the forward

edge **24** and the rear edge **26** of the window **16**, respectively, instead of generally horizontally as in the panel assembly **200**.

The illustrative panel assembly **300** comprises a panel **302**, a first retainer assembly **301***a*, and a second retainer assembly **301***b*. The first retainer assembly **301***a* and the second retainer assembly **301***b* are configured to secure the panel **302** in abutting relation to the window **16** and are selectively connectable to the panel **302** and are selectively detachable from the panel **302** as described in more detail below.

The first retainer assembly **301***a* comprises a first retainer **304***a* and a second retainer **306***a*, and the second retainer assembly **301***b* comprises a third retainer **304***b* and a fourth retainer **306***b*. Generally, each retainer **304***a*, **306***a*, **304***b*, **306***b* may be generally similar to the retainers **104**, **106** described above with reference to the panel assembly **100**, such as including engagement elements similar to engagement elements **116**, **118**, **128**, **130**. In this panel assembly **300**, however, the first retainer **304***a* and the second retainer **306***a* are provided coupled together as part of the first retainer assembly **301***a*. Similarly, the third retainer **304***b* and the fourth retainer **306***b*, which may be generally similar to the retainers **104**, **106** described above, are provided coupled together as part of the second retainer assembly **301***b*.

In this illustrative embodiment, the first retainer assembly **301***a* is oriented generally vertically, such as along the forward edge **24** of the window **16** with the first retainer **304***a* engaging the forward edge **24**, the top edge **22**, and/or the inward-facing surface **30** and the second retainer **306***a* engaging the bottom edge **28**, the forward edge **24**, and/or the inward-facing surface **30**. Similarly, the second retainer assembly **301***b* is oriented generally vertically, such as along the rear edge **26** of the window **16** with the third retainer **304***b* engaging the rear edge **26**, the top edge **22**, and/or the inward-facing surface **30** and the fourth retainer **306***b* engaging the rear edge **26**, the bottom edge **28**, and/or the inward-facing surface **30**.

Each of the first retainer assembly **301***a* and the second retainer assembly **301***b* includes a respective retainer assembly track **310**, **312**, which is configured to slidably engage a corresponding panel track **314**, **316**, disposed on the inward-facing surface **344** of the panel. The tracks **310**, **312**, **314**, **316** of the first retainer assembly **301***a*, the second retainer assembly **301***b*, and the panel **302** are oriented generally vertically. Accordingly, the panel **302** is selectively connectable to and selectively detachable from the retainer assemblies **301***a*, **301***b* by sliding the panel **302** generally vertically with respect to the window **16** (e.g., generally upward or downward). Specifically, the corresponding tracks **310**, **312**, **314**, **316** are aligned and the panel **302** is slid relative to the retainer assemblies **301***a*, **301***b* engage (or disengage) the tracks **310**, **312**, **314**, **316**.

FIG. **12** is an elevation view of an inward-facing surface **444** of an alternative illustrative embodiment panel assembly **400**, according to at least some aspects of the present disclosure. This alternative illustrative panel assembly **400** is generally similar to the panel assemblies described elsewhere herein, except for the features described below. Unless specifically indicated, the description of the structure and function or methodology of corresponding components with respect to the other panel assemblies described herein generally applies to the panel assembly **400**.

The panel assembly **400** comprises retainers **404***a*, **406***a*, **404***b*, **406***b*, one or more of which is movably disposed on the panel **402**, such as generally vertically, to selectively engage with and disengage from the window **16**. Alternative embodiments may include a similar arrangement in which one or more of the retainers **404***a*, **406***a*, **404***b*, **406***b* is configured to move generally horizontally to engage with and disengage from the window **16**.

In the illustrative embodiment of FIG. **12**, the retainers **404***a*, **406***a*, **404***b*, **406***b* are movably disposed on the inward-facing surface **444** of the panel **402**. The retainers **404***a*, **406***a*, **404***b*, **406***b* may be operatively connected to a respective tightening mechanism, such as linkages **408***a*, **408***b*, **410***a*, **410***b*. The tightening mechanisms may be operatively coupled for actuation by movement of one or more ornamental elements, such as landau buttons **412**, **414** disposed on the outward-facing surface **409** of the panel **402**. For example, linkages **408***a*, **408***b* are coupled to landau button **412** and/or linkages **410***a*, **410***b* are coupled to landau button **414**. Rotation of the landau buttons **412**, **414** in the clockwise direction is operative to move the retainers **404***a*, **406***a*, **404***b*, **406***b* to engage the window **16**, such as one or more of the edges **22**, **24**, **26**, **28** of the window **16** (FIG. **2**) (e.g., toward the horizontal midline of panel **402**). Similarly, rotation of the landau buttons **412**, **414** in the counter-clockwise direction is operative facilitate disengagement of the retainers **404***a*, **406***a*, **404***b*, **406***b* from the window **16**.

FIG. **13** is a cross-section view of an alternative illustrative panel assembly **500** installed on a vehicle window **16**, according to at least some aspects of the present disclosure. This alternative illustrative panel assembly **500** is generally similar to the panel assemblies described elsewhere herein, except for the features described below. Unless specifically indicated, the description of the structure and function or methodology of corresponding components with respect to the other panel assemblies described herein generally applies to the panel assembly **500**.

This illustrative panel assembly **500** comprises a panel **502** with retainers **504***a*, **504***b* disposed on the inward-facing surface **544** thereof. The retainer **504***a* is configured to engage the window **16**, such as the top edge **22** and/or the inward-facing surface **30** of the window **16**. The retainer **504***a* may be in the form of an elongated channel that extends along the upper edge of the panel **502**.

The retainer **504***b* is configured to engage the window **16**, such as the bottom edge **28** and/or the inward-facing surface **30** of the window **16**. The retainer **504***b* may be in the form of an elongated channel that extends along the bottom edge of the panel **502**. The retainer **504***b* comprises a biasing element, such as a compression spring **508**, configured to bias the panel **502** to hold the retainer **504***a* in engagement with the window **16**. More specifically, in this illustrative embodiment, the compression spring **508** is disposed in the channel of the retainer **504***b* and is configured to bias the panel **502** generally downward with respect to the window **16**, which holds the retainer **504***a* in engagement with the top edge **22** of the window **16**.

Various exemplary panel assemblies according to at least some aspects of the present disclosure may particularly useful in connection with vehicle windows that are fixed (e.g., not openable, closable, or otherwise movable). However, some exemplary embodiments may be used in connection with vehicle windows that are movable, such as pivotable between open and closed positions.

Some exemplary embodiments according to at least some aspects of the present disclosure may include alternative engagement elements. An alternative engagement element may comprise a connector affixed to the vehicle **10** by adhesive. For example, a connector may be secured to the outward-facing surface **20** of the window **16** by double-

sided adhesive tape. As another example, an alternative engagement element may comprise a pair of magnets and/or a magnet and a ferromagnetic component arrangement. For example, the magnet may be affixed to the panel and the ferromagnetic component may be positioned on the inward-facing surface **30** of the window **16** so that magnetic attraction between the magnet and the ferromagnetic component holds the panel on the window.

While the present invention has been illustrated by the description of specific embodiments thereof, and while the embodiments have been described in considerable detail, it is not intended to restrict or in any way limit the scope of the appended claims to such detail. The various features discussed herein may be used alone or in any combination within and between the various embodiments. Additional advantages and modifications will readily appear to those skilled in the art. The invention in its broader aspects is therefore not limited to the specific details, representative apparatus and methods and illustrative examples shown and described. Accordingly, departures may be made from such details without departing from the scope or spirit of the general inventive concept.

What is claimed is:

1. A removable panel assembly for a vehicle window, the panel assembly comprising:

a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window;

a first retainer configured to secure the panel in abutting relation to the window, the first retainer comprising a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window; and

a second retainer configured to secure the panel in abutting relation to the window, the second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window;

wherein at least one of the first retainer or the second retainer are selectively connectable to the panel and selectively detachable from the panel,

the first retainer is selectively connectable to the panel by engagement of a first externally threaded connector with a first internally threaded connector, and

the second retainer is selectively connectable to the panel by engagement of a second externally threaded connector and a second internally threaded connector.

2. The panel assembly of claim **1**, wherein, when the first retainer is connected to the panel, at least one of the first externally threaded connector or the first internally threaded connector extends through the panel, the first externally threaded connector engages the first internally threaded connector, the first retainer comprising the first internally threaded connector, and

when the second retainer is connected to the panel, at least one of the second externally threaded connector or the second internally threaded connector extends through the panel, the second externally threaded connector engages the second internally threaded connector, the second retainer comprising the second internally threaded connector.

3. The panel assembly of claim **1**, wherein the first edge and the second edge are generally opposite edges of the window.

4. The panel assembly of claim **1**, wherein the outward-facing surface of the window is curved, and

the panel is pre-curved to substantially conform to at least the portion of the outward-facing surface of the window.

5. The panel assembly of claim **1**, wherein the outward-facing surface of the window is curved, and

the panel is flexible such that the panel is bendable to substantially conform to at least the portion of the outward-facing surface of the window.

6. The panel assembly of claim **1**, wherein the panel comprises at least one ornamental element disposed on an outward-facing surface of the panel.

7. The panel assembly of claim **6**, wherein the at least one ornamental element comprises a landau bar and at least one landau button.

8. The panel assembly of claim **6**, wherein the at least one ornamental element comprises an indicium associated with at least one of a sports team, a trade, or a business.

9. The panel assembly of claim **1**, wherein the panel comprises a substrate and at least one of a covering or a coating;

wherein the substrate comprises at least one of plastic, molded resin, fiberglass, sheet metal, or aluminum.

10. The panel assembly of claim **9**, wherein the substrate is generally rigid, and

the covering is substantially flexible.

11. The panel assembly of claim **9**, wherein the covering comprises vinyl fabric.

12. A removable panel assembly for a vehicle window, the panel assembly comprising:

a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window;

a first retainer configured to secure the panel in abutting relation to the window, the first retainer comprising a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window; and

a second retainer configured to secure the panel in abutting relation to the window, the second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window;

wherein the first retainer further comprises a fifth engagement element configured to engage a third edge of the window, and

the second retainer comprises a sixth engagement element configured to engage the third edge of the window.

13. A removable panel assembly for a vehicle window, the panel assembly comprising:

a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window;

a first retainer configured to secure the panel in abutting relation to the window, the first retainer comprising a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window; and

a second retainer configured to secure the panel in abutting relation to the window, the second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth

engagement element configured to engage the inward-facing surface of the window;

wherein the panel comprises a third retainer configured to secure the panel in abutting relation to the window, the third retainer comprising at least one of a fifth engagement element configured to engage a fourth edge of the window or a sixth engagement element configured to engage the inward-facing surface of the window.

14. The panel assembly of claim **13**, wherein the third retainer comprises a generally U-shaped channel disposed proximate an edge of the panel.

15. A removable panel assembly for a vehicle window, the panel assembly comprising:

a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window, including at least one ornamental element disposed on an outward-facing surface of the panel, the at least one ornamental element including a landau bar and at least one landau button;

a first retainer configured to secure the panel in abutting relation to the window, the first retainer comprising a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window; and

a second retainer configured to secure the panel in abutting relation to the window, the second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window;

wherein the first retainer is selectively connectable to the panel by engagement of a first externally threaded connector with a first internally threaded connector,

when the first retainer is connected to the panel, at least one of the first externally threaded connector or the first internally threaded connector extends through the panel, the first externally threaded connector engages the first internally threaded connector, the first retainer includes the first internally threaded connector, and

the at least one landau button is coupled to at least one of the first externally threaded connector or the first internally threaded connector.

16. A removable panel assembly for a vehicle window, the panel assembly comprising:

a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window;

a first retainer configured to secure the panel in abutting relation to the window, the first retainer comprising a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window; and

a second retainer configured to secure the panel in abutting relation to the window, the second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window;

wherein the first retainer and the second retainer are coupled together as part of a first retainer assembly.

17. The panel assembly of claim **16**, wherein the panel comprises a first panel track disposed on an inward-facing surface of the panel,

the first retainer assembly comprises a first retainer assembly track, and

the panel is selectively connectable to the first retainer assembly by sliding the panel with respect to the window to engage the first panel track with the first retainer assembly track.

18. The panel assembly of claim **17**,

wherein the first panel track and the first retainer assembly track are oriented generally horizontally, and

the panel is selectively connectable to the first retainer assembly by sliding the panel generally horizontally with respect to the window to engage the first panel track with the first retainer assembly track.

19. The panel assembly of claim **17**, wherein the first panel track and the first retainer assembly track are oriented generally vertically, and

the panel is selectively connectable to the first retainer assembly by sliding the panel generally vertically with respect to the window to engage the first panel track with the first retainer assembly track.

20. The panel assembly of claim **16**, further comprising:

a third retainer configured to secure the panel in abutting relation to the window, the third retainer comprising a fifth engagement element configured to engage a first edge of the window and a sixth engagement element configured to engage the inward-facing surface of the window; and

a fourth retainer configured to secure the panel in abutting relation to the window, the fourth retainer comprising a seventh engagement element configured to engage the second edge of the window and an eighth engagement element configured to engage the inward-facing surface of the window;

wherein the third retainer and the fourth retainer are coupled together as part of a second retainer assembly.

21. The panel assembly of claim **20**, wherein the panel comprises a second panel track disposed on the inward-facing surface of the panel,

the second retainer assembly comprises a second retainer assembly track, and

the panel is selectively connectable to the second retainer assembly by sliding the panel with respect to the window to engage the second panel track with the first retainer assembly track.

22. The panel assembly of claim **21**, wherein the second panel track and the second retainer assembly track are oriented generally horizontally, and

the panel is selectively connectable to the second retainer assembly by sliding the panel generally horizontally with respect to the window to engage the second panel track with the second retainer assembly track.

23. The panel assembly of claim **21**, wherein the second panel track and the second retainer assembly track are oriented generally vertically, and

the panel is selectively connectable to the second retainer assembly by sliding the panel generally vertically with respect to the window to engage the second panel track with the second retainer assembly track.

24. A removable panel assembly for a vehicle window, the panel assembly comprising:

a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window;

a first retainer configured to secure the panel in abutting relation to the window, the first retainer comprising a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window;

a second retainer configured to secure the panel in abutting relation to the window, the second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window;

a third retainer configured to secure the panel in abutting relation to the window, the third retainer comprising a fifth engagement element configured to engage a first edge of the window and a sixth engagement element configured to engage an inward-facing surface of the window; and

a fourth retainer configured to secure the panel in abutting relation to the window, the fourth retainer comprising a seventh engagement element configured to engage a second edge of the window and an eighth engagement element configured to engage the inward-facing surface of the window;

wherein at least one of the first retainer, the second retainer, the third retainer, or the fourth retainer is movably disposed on the inward-facing surface of the panel to selectively engage with the window.

25. The panel assembly of claim **24**, further comprising a first tightening mechanism operatively coupled to at least one of the first retainer or the second retainer, the first tightening mechanism being configured to move at least one of the first retainer or the second retainer to engage the window.

26. The panel assembly of claim **25**, further comprising a second tightening mechanism operatively coupled to at least one of the third retainer or the fourth retainer to move at least one of the third retainer or the fourth retainer to engage the window.

27. A removable panel assembly for a vehicle window, the panel assembly comprising:

a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window;

a first retainer configured to secure the panel in abutting relation to the window, the first retainer comprising a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window; and

a second retainer configured to secure the panel in abutting relation to the window, the second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window;

wherein the second retainer includes a biasing element configured to bias the panel to hold the first retainer in engagement with the window, and

the biasing element includes a compression spring.

28. The panel assembly of claim **27**, wherein the first retainer is configured to engage a top edge of the window, and

the biasing element is configured to bias the panel generally downward.

29. The panel assembly of claim **27**, wherein the second retainer comprises an elongated channel disposed generally along a bottom edge of the panel and

the compression spring is disposed in the channel.

30. A method of manufacturing a removable panel assembly for a vehicle window, the method comprising:

providing a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window;

providing a first retainer configured to secure the panel in abutting relation to the window, the first retainer comprising a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window;

providing a second retainer configured to secure the panel in abutting relation to the window, the second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window;

providing a first externally threaded connector and a first internally threaded connector configured to selectively connect the panel to the first retainer; and

providing a second externally threaded connector and a second internally threaded connector configured to selectively connect the panel to the second retainer.

31. The method of claim **30**, wherein the outward-facing surface of the window is curved, and

providing the removable panel comprises pre-curving the panel to substantially conform to at least the portion of the outward-facing surface.

32. The method of claim **30**, wherein providing the removable panel comprises disposing at least one ornamental element on an outward-facing surface of the panel.

33. The method of claim **30**, wherein the panel comprises a substrate and at least one of a covering or a coating, and

providing the removable panel comprises:

providing the substrate, and

applying at least one of the covering or the coating to the substrate.

34. The method of claim **33**, wherein the substrate comprises at least one of molded plastic or fiberglass, and

providing the substrate comprises molding the substrate.

35. The method of claim **33**, wherein the covering comprises a vinyl fabric, and

providing the substrate and the covering comprises applying the vinyl fabric to the substrate.

36. A method of manufacturing a removable panel assembly for a vehicle window, the method comprising:

providing a removable panel sized and shaped to overlie at least a portion of an outward-facing surface of a vehicle window;

providing a first retainer configured to secure the panel in abutting relation to the window, the first retainer comprising a first engagement element configured to engage a first edge of the window and a second engagement element configured to engage an inward-facing surface of the window;

providing a second retainer configured to secure the panel in abutting relation to the window, the second retainer comprising a third engagement element configured to engage a second edge of the window and a fourth engagement element configured to engage the inward-facing surface of the window;

providing a third retainer configured to engage at least one of a fourth edge of the window or the inward-facing surface of the window, the third retainer comprising a generally U-shaped channel disposed proximate an edge of the panel.

37. A method of using a removable panel assembly, the method comprising:

disposing a first retainer on a vehicle window, including

engaging a first engagement element of the first retainer with a first edge of the window, and

engaging a second engagement element of the first retainer with an inward-facing surface of the window;

disposing a second retainer on the vehicle window, including

engaging a third engagement element of the second retainer with a second edge of the window, and

engaging a fourth engagement element of the second retainer with the inward-facing surface of the window; and

connecting a removable panel to the first retainer and the second retainer, the removable panel being in an abutting relation with at least a portion of an outward-facing surface of the vehicle window;

wherein connecting the removable panel to the first retainer and the second retainer includes engaging a first externally threaded connector with a first internally threaded connector, and engaging a second externally threaded connector and a second internally threaded connector.

* * * * *